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he says, not far from Monterey, and he describes it as not differing much from *D. p. gairdnerii* except by its smaller size.* The species is by no means abundant in southern California, and I have seen no specimens from south of San Bernardino County. A series of ten from various points in the southern half of the State gives the following average measurements: wing, 90.9; tail, 57.6; culmen, 16.9; bill from nostril, 13.2; tarsus, 15.1; middle toe and claw, 17.5; hind toe, 12.2; claw of hind toe, 7.2 mm.

AN UNUSUAL FLIGHT OF KILLDEER PLOVER (*ÆGIALITIS VOCIFERA*) ALONG THE NEW ENGLAND COAST.

BY DR. ARTHUR P. CHADBOURNE.

A VERY unusual flight of Killdeer Plover occurred along the New England coast in the latter part of November, 1888, and I have succeeded in collecting some data that may help to show from whence the birds came, and why they were found in certain places while only a short distance away they were absent or found in small numbers.

My data would have been far from satisfactory had it not been for the kindness of Dr. C. Hart Merriam, Chief of the Division of Economic Ornithology of the U. S. Department of Agriculture, who sent circulars to all the light-house keepers on the Atlantic coast, asking about the occurrence of Killdeer Plover in the fall of 1888, and to these reports I am largely indebted for what I have been able to find out about the flight in question. Where there seems to have been any doubt of the identity of the birds noted, the report has been excluded from the following list, and this has necessarily left out some places where the birds appeared in small numbers.

* "Le *p. Gairdneri* d'Audubon a exactement, d'après ce dernier auteur, les dimensions du *pubescens*, qui est plus grand que mon espèce nouvelle." —MALHERBE, *Métopographie des Picidees etc.*, Vol. I, p. 126.

Before receiving the circulars sent out by Dr. Merriam I succeeded in collecting a number of data that appear in the list given below and are marked with an asterisk.

| <i>Locality.</i> | <i>First Seen.</i> | <i>Remarks.</i> |
|------------------------------------|---------------------------------------|--|
| Nova Scotia. | | |
| Cape Sable..... | Latter part of November. | Remained till January. |
| Negro Island....Nov. 26..... | After the big gale. | Came in in afternoon from the east. Remained till Dec. 20. |
| Seal Island.....Nov. 25..... | ..... | Remained one month. |
| Westport..... | Middle of November. | |
| New Brunswick. | | |
| *“Bay of Fundy”..Dec. 1 (?)..... | Mr. Geo. A. Boardman. (See below). | |
| Belledune.....Nov..... | ..... | Remained till late in December, 100-200 in a flock. |
| *Grand Manan....Dec. 1 (?)..... | Mr. Geo. A. Boardman. (See below.) | |
| Southwest Head...Nov. 26..... | ..... | Scattered flocks. Remained till late in December. Came from the east. |
| Swallow Tail.....Nov. 28..... | ..... | Small flocks after a gale. Re- mained till late in December. |
| Maine. | | |
| Boon Island.....Nov. 26 ..... | ..... | Last seen Nov. 29. Small flocks. |
| Cape Elizabeth...Nov. 28..... | ..... | Flocks of from 25 to 50. Last seen Dec. 10. |
| Goat Island.....Nov. 25..... | ..... | After N. E. gale. Last seen Jan. 4. |
| Narragaugus.....Dec. 1..... | ..... | Stayed about four weeks. Small flocks. |
| Petit Menan.....Dec. 1..... | ..... | Small flocks. Remained until Dec. 7. |
| Pond Island.....About Nov. 20..... | ..... | Remained 2-3 weeks. |
| *Portland. | | See ‘Auk,’ Vol. VI, 1889, p. 69. |
| Seguin..... | Last of November..... | Remained two weeks. |
| Wood Island.....Nov. 26..... | ..... | Quite large flocks. Stayed until Dec. 10. Came in heavy N. E. gale. |
| New Hampshire. | | |
| *Isles of Shoals...Nov. 25..... | ..... | Large numbers in the midst of the great storm. Re- mained until Jan. 31. |
| Massachusetts. | | |
| Baker’s Island.....About Nov. 20. | | |
| Brant Point.....Nov. 26..... | ..... | Large flocks, in severe N. E. storm. Last seen Dec. 6. |
| *Cambridge.....Dec. 25..... | ..... | One. |
| Cape Ann.....Nov. 26..... | ..... | Last seen Jan. 18. Common until Dec. 15. |
| Cape Cod.....Nov. 26..... | ..... | In flocks. Left about Dec. 20. |
| Cape Poge.....Nov. 26..... | ..... | After the gale. Left Dec. 6 |
| Chatham.....Nov. 25..... | ..... | Scattered all over old pasture fields. “25 years since these birds were seen here.” Still present on Jan. 29. |

| <i>Locality.</i> | <i>First Seen.</i> | <i>Remarks.</i> |
|----------------------------------|--------------------|---|
| *Chatham..... | About Nov. 26..... | Large numbers, over beaches and upland. Came in during the storm. |
| Cuttyhunk..... | Nov..... | Still about on Jan. 26. |
| *Essex..... | About Nov. 29..... | Flock of twenty-five. |
| Hyannis and Range. | Nov. 26..... | Small flocks, over considerable territory. Last seen about the middle of Dec. |
| Beacon. | | |
| *Ipswich..... | Nov. 29..... | Two. |
| Marblehead..... | About Nov. 25..... | In small flocks. Seen last about Dec. 10. |
| *Marshfield..... | Dec. 7..... | One. (Probably others.) |
| Mayo's Beach.... | Nov. 26..... | Middle of January, some seen, "Meadows all full of them." |
| Monomoy Point.. | Nov. 26..... | Last seen on Jan. 10. "Not appeared in this neighborhood....(before)since 1870, to my knowledge." |
| *Nantucket..... | Nov. 27..... | Whole island covered with them. |
| Nauset Beach..... | Nov. 26..... | Last seen Jan. 22. |
| *Provincetown.... | Late in Nov..... | "Just after the big storm." and Chatham. Very large numbers. |
| *Revere Beach.... | Nov. 29..... | Two. |
| Rockport..... | Nov. 28..... | "They were very plenty along the shore of the mainland, and were in flocks of twelve or more." "Came after a violent gale." |
| Wood End..... | Nov. 26..... | Last seen about Dec. 10. |
| Rhode Island. | | |
| Block Island..... | Nov. 23 (?)..... | Last seen Dec. 24. |
| Conanicut Island. | Nov. | |
| Gull Rocks..... | About Nov. 24..... | Remained a few days. |
| *Newport..... | Nov. 24. | |
| Point Judith..... | Nov. | |
| Sakonnet..... | Nov. 25. | |
| Watch Hill..... | Nov. 25..... | Several small flocks and one large one. |
| Connecticut. | | |
| Black Rock..... | Last of Nov..... | Two. |
| New York. | | |
| *Good Ground (L. I.)..... | | First seen about Dec. 1. |
| Great West Bay...Nov. 26..... | | Last seen about Dec. 12. |
| Montauk Point...Nov. 25 (?)..... | | Came in with a N. E. gale. |
| New Jersey. | | |
| Navesink..... | Dec. 15. | |
| Pennsylvania. | | |
| Schooner Ledge.. | Dec. 15. | |

Formerly the Killdeer Plover was not uncommon in southern New England, but for years it has been very rare. The birds still breeds in Rhode Island, however, for Mr. Charles H. Lawton of Newport writes that "the Killdeer is quite plenty with us, but has

decreased considerably of late years. They lay in several localities and generally stay until early November," and Mr. J. M. Southwick says "the species is not uncommon at Bristol, R. I., or was not a few years ago; not abundant ever, and perhaps rarer for the past four years." Still anything like a fall flight of Killdeer in Massachusetts is a thing of the past and there is no recorded instance of such vast numbers as visited our coast in November, 1888.

On the eastern side of Cape Cod, on Nantucket, and the Isles of Shoals, large numbers of Killdeer came in from the sea, some of them on November 25, but the majority on the morning of the 26th. One of the market gunners said that "the whole island of Nantucket, both beach and upland, was covered with the birds" which occurred in loose straggling flocks. There seemed to be no other species with them *; and though not fat, they were not in very poor condition. He had seldom known of this species on the island, and then in extremely small numbers. Along the eastern side of Cape Cod the Plover were as abundant as on Nantucket, and the conductors on the trains running from Provincetown to Boston reported that during and just after the big storm late in November, 1888, the whole country about Provincetown was alive with Killdeer Plover, a bird that few of the gunners knew, while all along the beaches from Provincetown to Chatham large flocks were continually started up by the train. "It seemed as if we were passing through one big flock of them all the way, and the fog made them afraid to go out to sea against the wind." At the Isles of Shoals, Mrs. Celia Thaxter writes,† "I was not at the Shoals when the birds appeared. All I know about them my brother tells me. It seems they appeared in large numbers, hundreds of them, in the midst of the great storm of November 25, feeding in the little valleys where the sea swept across the island. All sorts of strange things were cast up by the storm on these islands and the birds were busy devouring everything they could find, always running, chasing each other, very quarrelsome, fighting all the time. They were in very poor condition, so lean that the men did not shoot them after the first day, a fact that gives your correspondent great satisfaction! They

* The only exceptions I know of are one *Totanus melanoleucus* at Winthrop, Mass., and another at Marshfield; also a few *Charadrius dominicus* at Newport, R. I.

† Through the kindness of Mr. Bradford Torrey I have been allowed to use Mrs. Thaxter's letters to him about the Killdeer Plover.

were very tame, would settle back immediately after being disturbed. Their cry was very annoying, piercing, and exasperating, especially as they kept it up all night. My brother said they would allow you to come within twenty feet of them without moving. No one had ever seen them before." I was told that at Chatham about Nov. 26 the birds swarmed everywhere, but after the first day or two grew shy and were found inland about ponds and spring-holes. After the storm the birds gradually disappeared, except a few that remained at favorable points for a long time; at Chatham some were seen as late as Dec. 22, and at the Isles of Shoals they had not all gone on Jan. 31, 1889. On the eastern end of Long Island the birds apparently occurred in large numbers, though I have no very satisfactory data from that region. I have not heard of any from farther up Long Island Sound, or on the Connecticut coast, except at Black Rock, which is near Bridgeport. Dr. William C. Rives says that about Newport Mr. Charles H. Lawton reports: "The day of the big storm, Nov. 24, they [the Killdeer Plover] made their appearance, and have been feeding in this locality ever since. I have been noting a large flock that has been feeding in the wet land at the head of Almy's Pond. . . . They were there last night (Dec. 24). I have only heard [of them] within a few miles along the coast, so can't say how far the flight extends. They have been very abundant, never heard of such a flight before. . . . I have also heard of some Golden Plover the first day or two of the flight." From Cape Cod as far north as Newburyport, and probably to Portland, Maine, the birds were common, but not in anything like the numbers found along Cape Cod and on Nantucket. At Portland and Biddeford, Maine, they were apparently about as plenty as near Boston. Mr. Geo. A. Boardman of Calais, Maine, writes "there has been quite a flight of Killdeer Plovers, the first I heard of was shot from a flock on Dec. 1, and the last Dec. 15. Most were sent me from Grand Manan. It is now [Dec. 29] two weeks since I have heard of any being shot." From Nova Scotia and New Brunswick I have only the light-house reports, but these seem to show that the eastern and southern parts of Nova Scotia were the most visited. South of Long Island no birds are reported until well into December, and by that time many would have worked their way south.

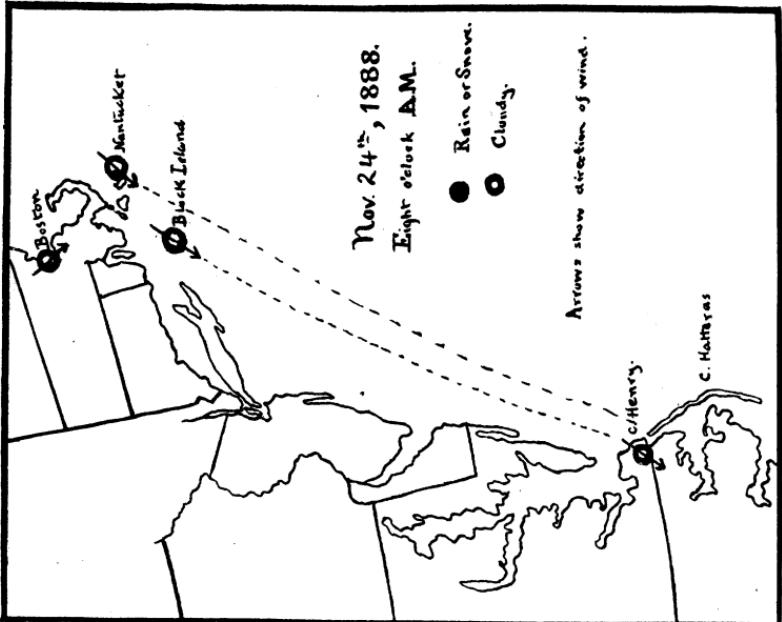
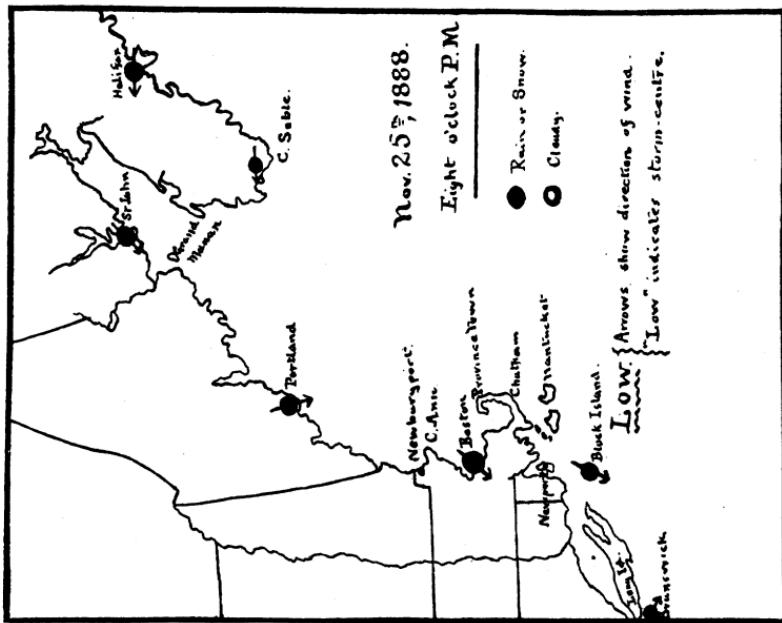
The flight seems to have been limited to within a mile or two

of the coast. The farthest inland that I know the species to have been shot is Cambridge, Mass., where a single bird was taken by Mr. W. P. Coues on Dec. 25, 1888.

The region from which these Plover came cannot be absolutely proved, but there seems to be evidence enough to leave little doubt that it was somewhere in the South Atlantic States north of Florida. Mr. S. H. Henshaw has most kindly examined the stomachs of several Killdeer shot on Nantucket between the 28th and 30th of November, not more than three days after their arrival on the Island. They contained practically nothing but insects, and most of these were so broken and macerated that they had undoubtedly been in the stomach for several days, probably a week. There was no species that does not occur on the Massachusetts coast, though the majority are far more common in South Carolina, North Carolina, and Virginia than on Nantucket. "Had the birds come from west of the Alleghany Mountains some characteristic insects would almost surely have been found, and the same is true if they had come from Florida." Taking it for granted that this portion of the flight, at any rate, came from the Atlantic States, somewhere north of Florida and south of New England, probably not north of Virginia, let us see how the great influx of Killdeer Plover along the New England coast can be accounted for.

In the southern Atlantic States the Killdeer are probably migrating southward during the latter part of November. In the Carolinas on Nov. 23 at 8 p. m. the wind was northeast and from eight to ten miles an hour, while farther inland it was due north and only six miles an hour, and throughout the whole region it was somewhat cloudy. Mr. W. W. Cooke * and others have proved that slight cloudiness will not keep birds from starting on their southern journey, and on this evening there was a light and favorable wind to help them south without being so strong as to make it hard for them to direct their course as they wished. During the night of the 23rd it grew more cloudy, but the birds, though unable to see their landmarks, yet thinking their course the right one would have kept on their way. In the mean time the wind had gradually shifted more to the west, until at eight A. M. it was due north or northwest, and therefore

* 'Report of Bird Migration in the Mississippi Valley in the years 1884 and 1885.
W. W. Cooke. Washington, 1888.



BASED ON THE TRI-DAILY WEATHER MAPS OF THE U. S. SIGNAL SERVICE.

off-shore, and blowing at the rate of forty miles an hour. After the earth had been hidden by clouds the greater velocity of the wind would not have been noticed, for the birds would have been carried onward as fast as the clouds below or around them, and it is well known that a balloon may move at a tremendous speed without the occupants knowing it if the earth is hidden from view. This must have brought the birds that started from near the coast over the ocean long before morning, and as they descended through the clouds expecting to feed and rest they would have found themselves over the water and carried along by a violent wind; they would then have flown but little above the sea so as not to pass over any land without knowing it.

At Charleston, South Carolina, on November 24, at 8 A. M., the wind was blowing forty miles an hour and was off-shore, and the storm centre was moving north at the rate of seven hundred miles in twenty-four hours. Some of the Plover nearer shore may have struggled against the off-shore wind long enough to get back to land, but those farther out must have been caught in the northern current and have been unable to make way against the much stronger gale blowing north on the eastern side of the storm centre. By the time they had been carried around the storm centre and had reached the weaker back current, they would have completely lost their bearings and have ceased to struggle against the storm. Even if they had held their own against the wind, they would have gained nothing, for the storm was moving north all the time and would have carried them with it. On the morning of Nov. 24 the only points on the Atlantic coast where the wind was blowing on shore were Cape Cod, Long Island, parts of the Massachusetts and Maine coasts, Nova Scotia and near Cape Hatteras, and the birds, carried along by the wind, would have been brought to land at these points. Around the storm centre the wind is continually working inward in a spiral, and therefore during the northward progress of the storm the birds were being concentrated more and more around the central point and by the time this point was near Block Island, N. Y. (Nov. 25), most of the Plover were circling around it with progressively smaller and smaller numbers on the periphery. Having reached the neighborhood of Block Island, the storm centre remained stationary for about forty-eight hours, and this undoubtedly gave time for all of the birds to reach land before the storm moved farther north.

In this way we should expect to find the largest number of the birds on the coast near Block Island where the wind was on shore, and at points more and more distant from this place their numbers would gradually diminish. A comparison of the list of localities at which the birds were found, with the map showing the direction of the wind when the centre was near Block Island, will show that this was apparently the case. At Cape Hatteras we should expect to hear that Killdeer appeared in considerable numbers on Nov. 24, but the storm was moving north so rapidly that in a few hours the wind blew across Cape Cod and Martha's Vineyard (see dotted line on the map) before reaching Cape Hatteras, and few if any of the birds would have been carried across the land without alighting.

A NEW SPECIES OF DUCK FROM TEXAS.

BY GEORGE B. SENNETT.

Anas maculosa, nov. spec. MOTTLED DUCK.

♂ adult. Type in my collection, No. 5857, taken by J. A. Singley, April 4, 1889, at Nuesces Bay, near Corpus Christi, Texas; collector's No. 1386.

SPEC. CHAR.—Top of head blackish brown, margined with very pale buff; chin and throat isabella color; cheeks buffy white with narrow streaks of dark brown. Feathers of breast, wings, upper parts, and flanks blackish brown margined with pale buff. Under parts buffy white, each feather with a broad blackish brown spot near the tip, giving a decided mottled appearance. Under tail-coverts blackish with outer margin of inner web reddish buff, that of outer web buffy white. The four median feathers of tail blackish brown; the others fuscous margined with pale buff having a V-shaped mark as in *A. fulvigula*, but of a buffy white. Under surface of all tail-feathers light gray excepting the four median which are blackish brown. Lining of wing white. Speculum metallic purple, feathers tipped with white. Bill has small black spot on base of lower edge of upper mandible, as in *A. fulvigula*. Feet reddish orange. Wing, 10.05; culmen, 2.25; tarsus, 1.75; middle toe and claw, 1.50 inches.

♀ adult. Type in my collection, No. 5858, taken by J. A. Singley, April 4, 1889, at Nuesces Bay, near Corpus Christi, Texas; collector's No. 1387.